

QUEENSLAND UNIVERSITY OF TECHNOLOGY

SYSTEMS PROGRAMMING

ASSIGNMENT 2

Distributed Communication

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1 About the Programs

The programs full fill the tasks one, two and three without exceptions.

1.1 Deviations

- For the server the signal handling is not done using the function `void (*signal(int sig, void (*func)(int)))(int);` because of thread safety. Also the usage of a signal to handle termination is optional – from the programs view. The accept loop is in a thread and with that a normal ui interaction would be possible.
- The server features a queue that will always accept new clients, the queue is fed to a thread pool that will then answer client requests – clients will wait until they receive a start signal from the server.
- The server has two booleans with dataraces – they are used to toggle the state of the server. They were left in since it doesn't matter if a thread misses the 'first' signal to shut down¹ and the mutexes to guard the variables were rated worse (performance).
- Both, the server and client have a default port and IP address to the programs can be started without arguments for convenience purpose.

1.2 Client Arguments

`./client [IP-ADDRESS] [PORT]`

The IP-ADDRESS Argument is optional (but is needed to specify PORT) and defaults to 127.0.0.1

The PORT Argument is optional and defaults to 12345

1.3 Server Arguments

`./server [PORT]`

The PORT Argument is optional and defaults to 12345

2 Remarks

There are similarities in my network code and the code one can find in [Beej's Guide to Network Programming](#)² as this was the main information resource regarding the network aspect of the assignment.

¹threads only read or set the variable to false

²<http://beej.us/guide/bgnet/output/html/singlepage/bgnet.html>